

In the Claims:

Please amend Claims 1-18 and 20-22 as shown below, and add new Claims 24-28 prior to calculating the fees due for this patent application. A complete copy of the claims including marked-up versions of each claim which is amended in this Preliminary Amendment appears below.

1 1. (Currently Amended) A laser multiplexing apparatus comprising a compound lens  
2 comprising at least two focusing elements arranged to focus at least two respective laser  
3 beams to a focal point on a common workpiece.

1 2. (Currently Amended) An element as ~~claimed in claim 1~~ defined in Claim 1, in  
2 which the compound lens comprises an array of lenses.

1 3. (Currently Amended) A laser including an element as ~~claimed in claim 1 or claim~~  
2 ~~2~~ defined in Claim 1.

1 4. (Currently Amended) A method of multiplexing laser beams comprising  
2 temporally interleaving at least two pulsed laser beams such that said beams are  
3 multiplexed independent of their state of ~~polarisation~~ polarization.

1 5. (Currently Amended) A method as ~~claimed in claim 4~~ defined in Claim 4, in  
2 which at least two laser beams are spatially separated and in which a variable deviation  
3 element focuses the laser beams onto a common target area on a workpiece.

1 6. (Currently Amended) A method as ~~claimed in claim 4 or claim 5~~ defined in Claim  
2 4, in which the variable deviation element is moveable so as to focus the temporally  
3 interleaved beams onto the common target area on a workpiece.

1 7. (Currently Amended) A method of multiplexing laser beams comprising the ~~steps~~  
2 steps, in any order, ~~of~~ of:  
3 spatially multiplexing laser pulses onto a common ~~workpiece~~ workpiece; and  
4 temporally interleaving at ~~least~~, least some of the spatially multiplexed pulses.

1 8. (Currently Amended) A method as ~~claimed in claim 7~~ defined in Claim 7, further  
2 comprising ~~temporally~~ temporally overlapping at least some of the pulses.

1 9. (Currently Amended) A laser multiplexing apparatus ~~comprising~~ comprising:  
2 at least two pulsed laser sources for generating pulsed laser ~~beams~~ beams; and  
3 a temporal multiplexing element arranged to temporally interleave at least two  
4 pulsed laser beams.

1 10. (Currently Amended) An apparatus as ~~elaimed in claim 9~~ defined in Claim 9, in  
2 which the temporal multiplexing element comprises a variable deviation element.

1 11. (Currently Amended) An apparatus as ~~elaimed in claim 10~~ defined in Claim 10, in  
2 which the variable deviation element comprises a moveable reflector or wedge.

1 12. (Currently Amended) An apparatus as ~~elaimed in claim 10~~ defined in Claim 10, in  
2 which the variable deviation element comprises a moveable refractor.

1 13. (Currently Amended) An apparatus as ~~elaimed in claim 10~~ defined in Claim 10, in  
2 which the variable deviation element comprises a moveable diffractive element.

1 14. (Currently Amended) An apparatus as ~~elaimed in claim 10~~ defined in Claim 10, in  
2 which the variable deviation element has a number of reflective surfaces being an integer  
3 number of the number of laser sources being multiplexed.

1 15. (Currently Amended) An apparatus as ~~elaimed in any of claims 9 to 14~~ defined in  
2 Claim 9, further comprising a laser multiplexing element as ~~elaimed~~ defined in ~~any of~~  
3 ~~claims 1 to 3~~. Claim 1.

1 16. (Currently Amended) A high power laser produced plasma generation apparatus  
2 ~~comprising~~ comprising:

3 a laser as ~~elaimed~~ defined in ~~any of claims 1 to 3 and/or~~ Claim 1; and

4 an apparatus as ~~elaimed~~ defined in ~~any of claims 9 to 14.~~ Claim 9.

1 17. (Currently Amended) A laser plasma production apparatus ~~comprising~~  
2 comprising:

3 a laser as ~~elaimed~~ defined in ~~any of claims 1 to 3 or~~ Claim 1; and

4 a laser apparatus as ~~elaimed~~ defined in ~~any of claims 9 to 14.~~ Claim 9.

1 18. (Currently Amended) A method of multiplexing laser beams comprising the steps  
2 ~~of~~ of:

3 directing pulsed laser light from two or more independent lasers onto a movable  
4 deviation ~~element~~ element; and

5 moving said deviation element at a rate such that deviation of a laser pulse  
6 between lead and trailing ~~edge~~ edges is ~~minimised.~~ minimized.

1 19. (Original) A laser multiplexing assembly comprising a beam shaping element in  
2 which the beam shaping element is arranged to direct a first laser beam along an axis  
3 common with a second laser beam axis onto a common focusing element arranged about  
4 said common axis.

1    20.    (Currently Amended) An assembly as ~~elaimed in claim 19~~ defined in Claim 19, in  
2    which the beam shaping element is arranged to spatially separate the first and second  
3    beams.

1    21.    (Currently Amended) An assembly as ~~elaimed in claim 19 or 20~~ defined in Claim  
2    19, in which the beam shaping element is formed of a lens.

1    22.    (Currently Amended) An assembly as ~~elaimed in claim 21~~ defined in Claim 21, in  
2    which the lens is an axicon lens.

1    23.    (Original) A method of multiplexing laser beams comprising the steps of directing  
2    a first laser beam along an axis common with a second laser beam axis onto a common  
3    focusing element arranged about said common axis.

1    24.    (New) A laser multiplexing apparatus comprising:  
2            a plurality of laser sources each of which generates a laser beam along an axis that  
3    is laterally and/or angularly spaced apart from the axes of all other laser beams; and  
4            a temporal multiplexing element that is configured and arranged to temporally  
5    interleave the laser beams from the plurality of sources such that the plurality of laser  
6    beams all propagate close together.

1    25.    (New) A laser multiplexing apparatus as defined in Claim 24, wherein the  
2    temporal multiplexing element comprises:  
3            an array of respective closely spaced, small lenses forming a "fly-eye"  
4    arrangement.

1    26.    (New) A laser multiplexing apparatus as defined in Claim 24, wherein the  
2    temporal multiplexing element comprises:  
3            a rotating mirror or prism which introduces a time-varying angular deviation to the  
4    laser beams.

1    27.    (New) A laser multiplexing apparatus as defined in Claim 24, wherein the  
2    temporal multiplexing element comprises:  
3            a wedge-shaped prism that is rotated such that an output face of the wedge-shaped  
4    prism presents the same angle of incidence to the laser beams in turn as they are  
5    sequentially pulsed.

1    28.    (New) A laser multiplexing apparatus as defined in Claim 24, wherein the  
2    temporal multiplexing element comprises:  
3            a plurality of beam shaping elements that have the plurality of laser beams  
4    respectively focused thereupon to produce respective coaxial circular output beams; and

- 5           a common focusing element that produces a substantially collimated annular
- 6   output beam from the circular annular output beams.